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WEST VIRGINIA UNIVERSITY
AGRICULTURAL EXPERIMENT STATION
MORGANTOWN, W. VA.

BULLETIN 92.

DECEMBER 31, 1903.

Commercial Fertilizers.

Report for 1903.

PART II.

From May 1 to December 31.

By J. H. STEWART and B. H. HITE.

[The Bulletins and Reports of this Station will be mailed free to any citizen of West Virginia upon written application. Address, Director of Agricultural Experiment Station, Morgantown, W. Va.]

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NOTICE.

Application for bulletins of this Station should be addressed to the Director of the West Virginia Agricultural Experiment Station, Morgantown, W. Va.

(The bulletins named below are available for distribution.)

- No. 4. The Creamery Industry; Its Adaptability to West Virginia.
- No. 5. The Selection of Milch Cows.
- No. 14. Farm and Garden Insects and Experiments with Remedies; Notes of the Season.
- No. 15. Raspberry Gouty-Gall Beetle.
- No. 16. Yellow Locust, Insect Ravages Upon.
- No. 17. Black Spruce, Insect Ravages.
- No. 19. Your Weeds and Your Neighbor's, Part 1. Weeds as Fertilizers.
- No. 25. Plat Experiments with Commercial Fertilizers on Wheat.
- No. 27. Notes on Pruning.
- No. 28. Plat Experiments with Commercial Fertilizers on Corn.
- No. 29. Experiments with Potatoes at the Station. Experiments on Corn at the Out Stations.
- No. 30. Address and Notes on Sheep.
- No. 33. Sub-Irrigation in the Green House.
- No. 38. Potato Blight, Potato Scab.
- No. 42. Vegetables.

No. 43. When, Why, What and How to Spray.

No. 44. Practical Entomology.

Special Bulletin No. 2. Proceedings connected with the celebration upon the completion of the Station Building and the organization of the Sheep Breeders and Wool Growers' Association and the State Horticultural Society.

Third Annual Report, 1890.

No. 54. Nursery Hints.

No. 55. Sugar Beets.

No. 58. The Effect of Pressure in the Preservation of Milk.

No. 59. Whole Corn Compared with Corn Meal for Fattening Hogs.

No. 60. Poultry Experiments.

No. 61. Sheep Feeding Experiments.

No. 62. A Study of the Effects of Incandescent Gas light on Plant Growth.

No. 64. Sugar Beet Investigation in 1899.

No. 66. Fruit Diseases and How to Treat Them.

No. 67. The Hessian Fly in West Virginia.

No. 68. Periodical Cicada or Seventeen-year Locust in West Virginia.

No. 69. Report on Examination of Wheat Stubble from Different Sections of the State, and on the Joint Worm in Wheat.

No. 70. Spraying.

No. 71. Poultry Experiments.

No. 72. Commercial Fertilizers.

No. 73. Poultry Experiments. Loss of Weight in Eggs During Incubation.

No. 74. Cold Storage.

No. 75. Apple Districts of West Virginia.

No. 76. Commercial Fertilizers.

- No. 77. The New Fertilizer Law, J. H. Stewart, '02.
- No. 78. Treatment for San Jose Scale.
- No. 80. Fertilizers, Part 1, Sources and Composition.
- No. 81. Vegetable Gardening in the Mountain Glades.
- No. 82. Peach Growing in West Virginia.
- No. 83. Poultry Experiment.
- No. 84. Experiments with Buckwheat and Oats.
- No. 85. Commercial Fertilizers.
- No. 86. Cranberries in West Virginia.
- No. 87. Greenhouses.
- No. 88. Poultry Experiments.
- No. 89. Rural Water Supply.
- No. 90. Sheep Feeding Experiments.
- No. 91. Commercial Fertilizers.

THE following pages conclude the report on Commercial Fertilizers as required by the Fertilizer Law of this State, for the year 1903. The method of stating the results of the Inspectors work adopted last year and consisting essentially in devoting a separate paragraph to each brand instead of crowding the results into an almost un-readable table, has been continued and has met with the heartiest endorsement of all concerned. The facts concerning every brand on sale in the State are readily accessible.

This part of the report on Commercial Fertilizers is being distributed (as have previous reports), at the time when it is believed it will be of most service to the purchasers of fertilizers. If issued earlier, it might be, and in many instances certainly would be mislaid before it could be of service in the selection of fertilizers for the present year. Certain manufacturers have expressed no little dissatisfaction because the report has been so long withheld, but it was thought best to put it in the hands of the purchasers just as nearly as possible at the time the next purchase would be made, and if the manufacturers in question knew, as they of all others certainly could have known, that their goods were up to the guarantee, there would be no reason on the part of themselves or anyone else for any anxiety whatever in the matter.

Attention of purchasers is called to the following points, conspicuous among which are the statements in the latter pages of this report, relative to the brands that fell short, either in the

quantity or the quality, of the constituents claimed. Farmers and other purchasers of commercial fertilizers should have in mind the fact that the shortages reported in these pages have to do not with the maximum guarantees, which are usually to be found on the bags or barrels, but with the smallest quantity and most inferior material which the manufacturer stated under oath should be found in his various brands. The margin for variation in the composition of any brand as usually shown on the bags or barrels in the difference between the maximum and minimum guarantee, is certainly wide enough to account for any accidental or unavoidable variation in composition, if indeed the purchaser is to have any idea what-so-ever, as to the value of the thing for which he is paying out hard cash, and it is simply inexcusable for the composition of the fertilizer to fall below the lowest figures claimed. Farmers will consult their own interests by noting very carefully the concerns which, while placing their maximum figures so high, are evidently so anxious to cut so close to their lowest figures, and farmers should refuse to invest in brands falling short 10 per cent. to 30 per cent. of the total amount claimed, unless, indeed, the price at which they can purchase such fertilizers from such companies as compared with the price at which they can purchase like fertilizers from other companies, is correspondingly low. Even then the very manifest importance of knowing, with some degree of certainty, what it is that one is buying and depending upon for his crops makes it preferable to by from those who have something less than 10—30 per cent., lack of regard for the statements, which they make under oath, as to what they are going to sell.

West Virginia has the best fertilizer law extant. Recently California found it necessary to enact a fertilizer law. The matter of drafting the bill was placed in the hands of one of the greatest living agricultural scientists and his associates. They had carte-blanc to make the law what they pleased. They studied with

much care every fertilizer law of any consequence in existence. It should be a matter of some satisfaction to purchasers of commercial fertilizers in West Virginia, to know that the law enacted by this great State of California is in all essential points the West Virginia statute.

Conspicuous among the characteristics of the West Virginia and California laws is the requirement, in Section 1, having to do with "the materials from which said constituents are derived." If any farmer, a purchaser of commercial fertilizers, entertains the slightest doubt as to the importance (not to say the necessity), of just such a knowledge of the composition of fertilizers as this requirement is so well calculated to disclose to him, he should write to this station for bulletins No. 77 and No. 80, which deal at length with this matter, a few copies of which are still available for distribution.

RESULTS OF INSPECTION WORK

May 1 to Dec. 31, 1903.

GOODS OF

AMERICAN AGRICULTURAL CHEMICAL COMPANY,

NEW YORK AND BALTIMORE.

4810. *GEM ALKALINE BONE*. C. W. Siever, Keyser.
Guarantee: Phosphoric acid soluble, 4, reverted, 2; insoluble, 1; total, 7; available, 6; potash, 3; phosphoric acid from dissolved phosphate rock, potash from kainit. *Found*: Phosphoric acid, 3.68; Reverted. 3.02; insoluble, 0.64; total, 7.34; available, 6.70; potash, 3.42; *chlorine, 6.9.

*This represents the proportion of chlorine corresponding to one per cent of potash in the fertilizer. The actual percentage of chlorine may be found by multiplying the above by the actual percentage of potash present. Chlorine is a constituent of muriate of potash, of common salt and of certain compounds of lime and magnesia. When high grade sulphate is used as the source of potash the fertilizer should contain no more than traces of chlorine. The quantity of the latter increases directly with the inferiority of the source employed and its estimation serves approximately as an indication of such source. Where kainit is guaranteed and the chlorine exceeds 4.5, it may be assumed that an inferior grade of this material has been used.

4932. *GEM ALKALINE BONE*. A. S. Dandridge, Shepherdstown. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 1.01; reverted, 6.32; insoluble, 0.51; total, 7.84; available 7.33; potash; 3.16; chlorine, 4.9.

4933. *GEM ALKALINE BONE*. R. Hunter, Berkeley Springs. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 1.45; reverted, 6.15; insoluble, 0.56; total, 8.16; available, 7.60; potash, 3.03; chlorine, 4.9.

4842. *FINE GROUND BONE*. O. R. Carmen, Wellsburg. *Guarantee*: Total phosphoric acid, 23.00; nitrogen, 2.47; phosphoric acid from animal bone; nitrogen from animal bone. *Found*: Total phosphoric acid, 24.13; nitrogen, 2.89; availability of nitrogen, 83.

4814. *FINE GROUND BONE*. C. W. Siever, Keyser. *Guarantee*—(As above.) *Found*: Total phosphoric acid 26.90; nitrogen, 2.47; availability of nitrogen, 90.

4934. *BONE MEAL*. West Charleston Feed Store, Charleston. *Guarantee*: Phosphoric acid; total, 14.00; nitrogen, 1.65; phosphoric acid from animal bone; nitrogen from animal bone. *Found*: Total phosphoric acid, 20.05; nitrogen, 2.21; *availability of nitrogen, 77.

*The figure for the availability of nitrogen represents that proportion of the total nitrogen of the fertilizer which is immediately available to the plant as food. The test employed is a modification of Street's neutral permanganate method. While the results obtained can be considered as but an approximation to the true quantities as indicated by actual field tests, nevertheless they are valuable as serving to show the *relative* availability of the nitrogen in various brands of fertilizers. An availability of 85 or above is considered high, 80-85 medium, below 75, low. The availability of nitrogen in bone meats is necessarily higher than in mixed goods unless nitrate is used in the latter.

4903. *BONE MEAL*. Bishop & Barbe, Jane Lew. *Guarantee*—(As above.) *Found*: Total phosphoric acid, 15.90; nitrogen, 1.26; availability of nitrogen, 84.

4841. *BEAN AND POTATO PHOSPHATE*. O. R. Carmen, Wellsburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 82.00; potash, 4.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from manure salts and kainit; nitrogen from dissolved fish, tankage, and other animal matter. *Found*: Phosphoric acid, soluble, 5.31; reverted, 3.19; insoluble, 1.79; total, 10.29; available, 8.50; nitrogen, 1.01; potash, 4.25; availability of nitrogen, 80.00; chlorine, 1.5.

4868. *W. & A. SPECIAL FALL MIXTURE*. Washington & Alexander, Charlestown. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; potash, 1.00; phosphoric acid from dissolved phosphate rock; potash, from kainit. *Found*: Phosphoric acid, soluble, 3.63; reverted, 5.27; insoluble, 0.95; total, 9.85; available, 8.90; potash, 1.19; chlorine, 6.6.

4802. *BRADLEY'S SOLUBLE DISSOLVED BONE*. L. W. Reppert, Easton. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from manure salts; nitrogen, from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 12.09; reverted, 3.55; insoluble, 0.82; total, 16.46; available, 15.64.

4803. *BRADLEY'S DISSOLVED BONE AND POTASH*. L. W. Reppert, Easton. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00;

available, 8.00; nitrogen, 1.03; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal matter; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 5.41; reverted, 2.61; insoluble; 1.34; total, 9.36; available, 8.02; potash, 2.28; nitrogen, 1.13; chlorine, 4.2; availability of nitrogen, 63.

4850. *BRADLEY'S ALKALINE BONE*. A. P. Russell & Co., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: phosphoric acid, soluble, 7.51; reverted, 3.66; insoluble, 0.27; total, 11.44; available, 11.17; potash, 2.56; chlorine, 4.6.

808. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE*. C. W. Siever, Keyser. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 11.71; reverted, 4.32; insoluble, 0.47; total, 16.50; available, 16.03.

4937. *CANTON CHEMICAL BAKER'S DISSOLVED S. C. BONE*. George Hering, Kingwood. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 11.51; reverted, 4.19; insoluble, 1.23; total, 16.93; available, 15.70.

4809. *CANTON CHEMICAL HARROW BRAND CROP GROWER*. C. W. Siever, Keyser. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 6.04; revert-

ed, 3.17; insoluble, 1.32; total, 10.53; available, 9.21; potash, 1.25; nitrogen, 1.05; chlorine, 7.6; availability of nitrogen, 86.

4811. *CANTON CHEMICAL SOLUBLE BONE AND POTASH*. C. W. Siever, Keyser. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kanit. *Found*: Phosphoric acid, soluble, 6.42; reverted, 3.75; insoluble, 0.55; total, 10.72; available, 10.17; potash, 2.19; chlorine, 3.6.

4815. *CANTON CHEMICAL BAKER'S SPECIAL WHEAT, CORN AND GRASS MIXTURE*. C. W. Siever, Keyser. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 1.00; total, 10.00; available, 9.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: phosphoric acid, soluble, 5.73; reverted, 3.20; insoluble, 1.32; total, 10.25; available, 8.93; nitrogen, 0.81; potash, 2.34; availability of nitrogen, 64; chlorine, 2.9.

4930. *CANTON CHEMICAL BAKER'S SPECIAL WHEAT, CORN AND GRASS MIXTURE*. Armstrong Chrislip, Day & Co., Buckhannon. *Guarantee*—(As above.) *Found*: phosphoric acid, soluble, 4.71; reverted, 5.21; insoluble, 1.34; total, 11.25; available, 9.92; nitrogen, 0.92; potash, 2.48; availability of nitrogen, 62; chlorine, 3.3.

4865. *CANTON CHEMICAL SOLUBLE ALKALINE BONE*. Washington & Alexander, Charlestown. *Guarantee*: Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; potash, 3.00; phosphoric acid from dissolved phosphate rock; potash, from kainit.

Found: Phosphoric acid, soluble, 11.33; reverted, 2.88; insoluble, 0.77; total 14.98; available 14.21; potash, 2.96; chlorine, 2.8.

4901. *CLEVELAND DRYER HORSEHEAD PHOSPHATE AND POTASH.* Bishop & Barbe, Jane Lew. *Guarantee:* Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash, from kainit. *Found:* Phosphoric acid, soluble, 6 15; reverted, 4.59; insoluble, 0.45; total, 11.18; available, 10.63; potash, 2.36; chlorine, 3.1.

4902. *CLEVELAND DRYER FOREST CITY BUCKEYE.* Bishop & Barbe, Jane Lew. *Guarantee:* Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 1.00; total, 10.00; available, 9.00; potash, 2.00; nitrogen, 2.47; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found:* Phosphoric acid, soluble, 7.57; reverted, 3.28; insoluble, 1.92; total, 12.77; available, 10.85; nitrogen, 2.55; potash, 2.50; availability of nitrogen, 88; chlorine, 1.7.

4936. *CLEVELAND DRYER HORSEHEAD PHOSPHATE.* George Herring, Kingwood. *Guarantee:* Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; phosphoric acid from dissolved phosphate rock. *Found:* Phosphoric acid, soluble, 0.38; reverted, 10.28; insoluble, 3.48; total, 14.14; available, 10.66.

4804. *DETRICK'S KANGAROO KOMplete KOMPOUND.* R. M. Harper, Elkins. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.65; potash, 3.00; phosphoric acid from dissolved phosphate rock and animal bone; potash

from manure salts and kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 3.97; reverted, 4.50; insoluble, 2.14; total, 10.61; available, 8.47; nitrogen, 1.62; potash, 3.08; availability of nitrogen, 82; chlorine, 3.2.

4856. *DETRICK'S KANGAROO COMPLETE KOMPOUND*. Jackson Bros., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.30; reverted, 4.46; insoluble, 1.78; total, 10.54; available, 8.76; nitrogen, 1.60; potash, 3.65; availability of nitrogen, 80; chlorine, 3.00.

4805. *DETRICK'S IMPERIAL COMPOUND*. R. M. Harper, Elkins. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 5.21; reverted, 3.27; insoluble, 1.24; total 9.72; available, 8.48; nitrogen, 0.92; potash, 2.44; availability of nitrogen, 65; chlorine, 4.3.

4851. *DETRICK'S IMPERIAL COMPOUND*. Jackson Bros., Buckhannon. *Guarantee*—(As above.) *Found*: Phosphoric acid soluble, 7.14; reverted, 2.45; insoluble 1.42; total, 11.01; available, 9.59; nitrogen, 1.08; potash, 2.59; availability of nitrogen, 80; chlorine, 3.8.

4852. *DETRICK'S STANDARD POTASH FERTILIZER*. Jackson Bros., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 2.00; insoluble, 1.00; total, 7.00; available, 6.00; nitrogen, 1.23; potash, 5.00; phosphoric acid from dissolved phosphate rock and animal matter; potash from manure salts and kainit; nitrogen from dissolved fish tankage and

other animal matter. *Found*: Phosphoric acid, soluble, 4.21; reverted, 2.81; insoluble, 1.59; total, 8.61; available, 7.02; nitrogen, 1.48; potash, 5.68; availability of nitrogen, 88; chlorine, 1.9.

4853. *DETRICK'S SOLUBLE BONE AND POTASH*. Jackson Bros., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid soluble, 7.51; reverted, 3.57; insoluble, 0.40; total, 11.48; available, 11.08; potash, 2.85; chlorine, 4.1.

4854. *DETRICK'S DISSOLVED S. C. BONE*. Jackson Bros., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: phosphoric acid, soluble, 12.36; reverted, 3.63; insoluble, 0.40; total, 16.39; available, 15.99.

4823. *DETRICK'S DISSOLVED S. C. BONE*. A. S. Dandridge, Shepherdstown. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 12.70; reverted, 3.02; insoluble, 1.05; total, 16.77; available, 15.72.

4855. *DETRICK'S PARAGON AMMONIATED DISSOLVED BONE PHOSPHATE AND POTASH*. Jackson Bros., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 4.80; reverted 3.13; insoluble, 2.23; total, 10.16; available, 7.93; nitrogen, 1.05; potash, 1.56; availability of nitrogen, 76; chlorine, 5.1.

4906. *GREAT EASTERN SOLUBLE BONE AND POTASH.* Lake & McCarty, Jane Lew. *Guarantee:* Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid derived from dissolved phosphate rock; potash from kainit. *Found:* Phosphoric acid, soluble, 5.78; reverted, 5.97; insoluble, 0.58; total, 12.23; available, 11.65; potash, 2.09; chlorine, 3.3.

4905. *GREAT EASTERN CORN FERTILIZER.* Lake & McCarty, Jane Lew. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 4.00; phosphoric acid from dissolved phosphate rock; potash from muriate and kainit; nitrogen from fish and tankage. *Found:* Phosphoric acid, soluble, 5.15; reverted, 3.83; insoluble, 1.20; total, 10.18, available, 9.98; nitrogen, 1.10; potash, 3.76; availability of nitrogen, 71; chlorine, 1.6.

4885. *GREAT EASTERN DISSOLVED BONE.* A. E. Alexander, Old Moatsville. *Guarantee:* Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available 14.00; phosphoric acid from dissolved phosphate rock. *Found:* Phosphoric acid, soluble, 10.69; reverted, 5.52; insoluble, 0.60; total, 16.81; available, 16.21.

4858. *GREAT EASTERN DISSOLVED BONE.* J. P. Strickler, Ellenboro. *Guarantee*—(As above.) *Found:* Phosphoric acid, soluble, 10.30; reverted, 5.66; insoluble, 0.79; total, 16.75; available, 15.96.

4886. *GREAT EASTERN ENGLISH WHEAT GROWER.* A. E. Alexander, Old Moatsville. *Guarantee:* Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phos-

phoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from fish and tankage. *Found*: Phosphoric acid, soluble, 5.94; reverted, 3.46; insoluble, 0.61; total, 10.03; available, 9.42; nitrogen, 1.13; potash, 2.30; availability of nitrogen, 80; chlorine, 4.8.

4904. *GREAT EASTERN ENGLISH WHEAT GROWER*. Lake & McCarty, Jane Lew. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 3.26; reverted, 5.05; insoluble, 0.95; total, 9.26; available, 8.31; nitrogen, 0.83; potash, 2.48; availability of nitrogen, 57; chlorine, 3.3.

4887. *GREAT EASTERN UNAMMONIATED WHEAT SPECIAL*. A. E. Alexander, Old Moatsville. *Guarantee*: Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 5.18; reverted, 6.78; insoluble, 0.51; total, 12.47; available, 11.96.

4857. *GREAT EASTERN UNAMMONIATED WHEAT SPECIAL*. J. P. Strickler, Ellenboro. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 7.98; reverted, 5.73; insoluble, 1.18; total, 14.89; available, 13.71.

4859. *GREAT EASTERN SOLUBLE BONE AND POTASH*. J. P. Strickler, Ellenboro. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 6.23; reverted, 5.13; insoluble, 0.63; total, 11.99; available, 11.36; potash, 2.46; chlorine, 2.9.

4824. *LAZARETTO DISSOLVED BONE PHOSPHATE*. The Shaffer & Brown Co., Kingwood. *Guarantee*:

Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 12.45; reverted, 3.25; insoluble, 1.07; total, 16.77; available, 15.70.

4825. *LAZARETTO EXCELSIOR A. A. A.* The Shaffer & Brown Co., Kingwood. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 6.31; reverted, 1.63; insoluble, 1.25; total, 9.19; available, 7.94; nitrogen, 1.28; potash, 1.38; availability of nitrogen, .82; chlorine, 6.7.

4826. *LAZARETTO DISSOLVED BONE PHOSPHATE AND POTASH.* The Shaffer & Brown Co., Kingwood. *Guarantee*: Phosphoric acid soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from Kainit. *Found*: Phosphoric acid soluble, 6.60; reverted, 3.03; insoluble, 1.38; total, 11.01; available, 9.63; potash, 2.06; chlorine, 5.6.

4889. *LAZARETTO H. G. DISSOLVED BONE PHOSPHATE AND POTASH.* A. E. Alexander, Old Moatsville. *Guarantee*: Phosphoric acid soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; potash, 5.00; phosphoric acid from dissolved phosphate rock; potash from manure salts and kainit. *Found*: Phosphoric acid, soluble, 9.06; reverted, 4.43; insoluble, 0.54; total, 14.03; available, 13.49; potash, 5.24; chlorine, 1.8.

4880. *MARYLAND BONO-SUPERPHOSPHATE.*

Martin Nicola, Moatsville. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 7.07; reverted, 4.29; insoluble, 1.29; total, 12.65; available, 11.36; potash, 2.00; chlorine, 4.5.

4881. *MARYLAND DISSOLVED S. C. BONE.*

Martin Nicola, Moatsville. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 9.71; reverted, 5.98; insoluble, 1.24; total, 16.93; available, 15.67.

4870. *M. E. WHEELER'S UNAMMONIATED WHEAT SPECIAL.* Henry Rupenkall, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 9.00; reverted, 3.05; insoluble, 2.00; total, 14.00; available, 12.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 12.24; reverted, 1.45; insoluble, 1.39, total, 15.08; available, 13.79.

4917. *M. E. WHEELER & CO. UNAMMONIATED WHEAT GROWER.* The Racket Store, Lewisburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 5.67; reverted, 6.86; insoluble, 3.98; total, 16.41; available, 12.42.

4918. *M. E. WHEELER & CO. WHEAT AND CLOVER FERTILIZER.* The Racket Store, Lewisburg. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 1.71; reverted, 8.24; insoluble,

ble; 1.65; total, 11.60; available, 9.95; potash; 2.82; chlorine, 2.8.

4849. *WILLIAMS & CLARK'S ACORN ACID PHOSPHATE*. A. P. Russell & Co., Buckhannon. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2 00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 12.73; reverted, 3.48; insoluble, 0.38; total, 16.59; available, 16.21.

4891. *WILLIAMS & CLARK'S ACORN ACID PHOSPHATE*. A. G. Chrislipp, Philippi. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 10.31; reverted, 5.75; insoluble, 0.56; total, 16.62; available, 16.06.

4860. *WILLIAMS & CLARK'S GOOD GROWER POTATO PHOSPHATE*. J. A. Hall, Auburn, *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 2.00; insoluble, 1.00; total, 7.00; available, 6.00; potash, 5.00; nitrogen, 1.23; phosphoric acid from dissolved phosphate rock and animal bone; potash from manure salts and kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 2.93; reverted, 3.65; insoluble, 0.87; total, 7.45; available, 6.58; nitrogen, 1.47; potash, 5.51; availability of nitrogen, 79; chlorine, 2.5.

4890. *WILLIAMS & CLARK'S PROLIFIC CROP PRODUCER*. A. G. Chrislipp, Philippi. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2 00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 3.90; reverted, 3.75;

insoluble, 1.18; total, 8.83; available, 7.65; nitrogen, 1.19; potash, 1.49; availability of nitrogen, 72; chlorine, 7.5.

4838. *WILLIAMS & CLARK PROLIFIC CROP PRODUCER*. W. R. Dudley, Wheeling. *Guarantee*—(As above: *Found*: Phosphoric acid, soluble, 2.69; reverted, 4.05; insoluble, 2.37; total, 9.11; available, 6.74; nitrogen, 1.01; potash, 1.21; availability, of nitrogen, 74; chlorine, 3.1.

4935. *WILLIAMS & CLARK'S DISSOLVED BONE AND POTASH*. West Charleston Feed Co., Charleston. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate rock; potash from kainit. *Found*: Phosphoric acid, soluble, 0.56; reverted, 9.82; insoluble, 2.80; total, 13.18; available, 10.38; potash, 2.13; chlorine, 1.1.

4839. *WILLIAMS & CLARK'S DISSOLVED BONE AND POTASH*. W. R. Dudley, Wheeling. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.44; reverted, 5.11; insoluble, 2.58; total, 12.13; available, 9.55; potash, 1.79; chlorine, 2.8.

4840. *WILLIAMS & CLARK'S ROYAL BONE AND POTASH*. O. R. Carmen, Wellsburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available 8.00; nitrogen, 1.03; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 4.12; reverted, 3.80; insoluble, 2.80; total, 10.72; available, 7.92; nitrogen, 1.08; potash, 2.13; availability of nitrogen, 78; chlorine, 1.1.

4820. *ZELL'S AMMONIATED BONE SUPER-PHOSPHATE*. G. T. Hodges, Duffields. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.05; potash, 2.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 4.86; reverted, 3.74; insoluble, 0.97; total, 9.57; available, 8.60; nitrogen, 1.65; potash, 1.97; availability of nitrogen, 82; chlorine, 3.7.

4869. *ZELL'S DISSOLVED S. C. PHOSPHATE*. R. Hunter, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 11.48; reverted, 4.54; insoluble, 0.37; total, 16.39; available, 16.02.

4871. *ZELL'S DISSOLVED BONE PHOSPHATE*. R. Hunter, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 11.49; reverted, 4.47; insoluble, 0.33; total, 16.29; available, 15.96.

4821. *ZELL'S DISSOLVED BONE PHOSPHATE*. G. T. Hodges, Duffield. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 12.87; reverted, 3.95; insoluble, 0.69; total, 17.51; available, 16.82.

4923. *ZELL'S DISSOLVED S. C. BONE*. W. F. Sill, Pennsboro. *Guarantee*: Phosphoric acid, soluble, 10.00; reverted, 2.00; insoluble, 1.00; total, 13.00; available, 12.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 8.21; reverted, 5.75; insoluble, 1.39, total, 15.35; available, 13.96.

4872. *ZELL'S LITTLE GIANT*. R. Hunter, Berkeley Springs. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 2.00; insoluble, 1.00; total, 8.00; available, 7.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from dissolved phosphate rock and animal bone; potash from kainit; nitrogen from dissolved fish tankage and other animal matter. *Found*: Phosphoric acid, soluble, 4.62; reverted, 4.20; insoluble, 1.48; total, 10.30; available, 8.82; nitrogen, 1.31; potash, 1.36; availability of nitrogen, 87; chlorine, 6.5.

THE ABBOTT & MARTIN RENDERING CO.

COLUMBUS, OHIO.

4914. *FINE RAW BONE MEAL*. W. P. Mason, & Co., Mannington. *Guarantee*: Phosphoric acid, total, 27.00; nitrogen, 1.23; phosphoric acid from bone; nitrogen from bone. *Found*: Total phosphoric acid, 30.06; nitrogen, 0.77; availability of nitrogen, 87.

4879. *PEERLESS BONE AND POTASH*. Sent in by H. B. Vaughan, Ona. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 3.00; insoluble, 2.00; total, 10.00; available, 8.00; nitrogen, 0.41; potash, 2.50; phosphoric acid from dissolved bone phosphate and tobacco stems; potash from muriate of potash; nitrogen from bone, tangage, blood and tobacco stems. *Found*: Phosphoric acid, soluble, 2.33; reverted, 5.79; insoluble, 3.20; total, 11.32; available, 8.12; nitrogen, 0.57; potash, 2.55.

THE ARMOUR FERTILIZER WORKS.

BALTIMORE, MD.

4898. *PHOSPHATE AND POTASH, NO. 1*. W. L. Cole, Clarksburg. *Guarantee*: Phosphoric acid, soluble,

8.00; reverted, 2.00; insoluble, 2.00; total, 12.00; available, 10.00; potash, 2.00; phosphoric acid from super-phosphate; potash from muriate of potash, sulphate of potash and kainit. *Found*: Phosphoric acid, soluble, 7.94; reverted, 2.41; insoluble, 0.28; total, 10.63; available, 10.35; potash, 2.56; chlorine, 3.3.

4899. *WHEAT SPECIAL*. W. L. Cole, Clarksburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total 10.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from animal bone and super-phosphate; potash from muriate of potash, sulphate of potash and kainit; nitrogen from bone, blood, tankage and nitrate of soda. *Found*: Phosphoric acid, soluble, 7.15; reverted, 2.35; insoluble, 0.81; total, 10.31; available, 9.50; nitrogen, 1.05; potash, 2.37; availability of nitrogen, 80; chlorine, 3.2.

4900. *GRAIN GROWER*. W. L. Cole, Clarksburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total, 10.00; available, 8.00; potash, 2.00; nitrogen, 1.65; phosphoric acid from animal bone and super-phosphate; potash from muriate of potash, sulphate of potash and kainit; nitrogen from bone, blood tankage and nitrate of soda. *Found*: Phosphoric acid, soluble, 6.52; reverted, 2.56; insoluble, 0.96; total, 10.04; available, 9.08; nitrogen, 1.89; potash, 2.47; availability of nitrogen, 85; chlorine, 4.1.

4606. *RAW BONE MEAL*. R. M. Harper, Elkins. Not registered. *Found*: Phosphoric acid, total, 23.88; nitrogen, 3.86; availability of nitrogen, 87.

THE BALTIMORE PULVERIZING CO.

BALTIMORE, MD.

4832. *SPECIAL FALL MIXTURE*. R. M. Stewart

& Son, Martinsburg. *Guarantee*: Phosphoric acid, insoluble, 1.50; total, 9.50; available, 8.00; potash, 1.00; phosphoric acid from Florida phosphate; potash from imported sulphate of potash. *Found*: Phosphoric acid, soluble, 0.99; reverted, 7.74; insoluble, 0.84; total, 9.57; available, 8.73; potash, 1.49; chlorine, 3.4.

BAUGH & SONS CO.

BALTIMORE, MD.

4829. *BAUGH'S DOUBLE EAGLE PHOSPHATE*. T. P. Licklider, Martinsburg. *Guarantee*: Phosphoric acid, insoluble, 3.00; total, 11.00; available, 8 00; potash, 1.00; nitrogen, 1.64; phosphoric acid from animal bone and phosphate rock; potash from kainit; nitrogen from fish tankage and animal bone. *Found*: Phosphoric acid, soluble, 3.20; reverted, 5.21; insoluble, 3.21; total, 11.63; available, 8.41; nitrogen, 1.73; potash, 1.41; availability of nitrogen, 85; chlorine, 5.1.

4909. *BAUGH'S DOUBLE EAGLE PHOSPHATE*. R. B. Bolyard, Fetterman. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.97; reverted, 2.72; insoluble, 2.90; total, 12.59; available, 9.69; nitrogen, 2.10; potash, 1.52; availability of nitrogen, 81; chlorine, 3.

4830. *BAUGH'S WHEAT FERTILIZER*. T. P. Licklider, Martinsburg. *Guarantee*: Phosphoric acid, insoluble, 3.00; total, 11 00; available, 8 00; nitrogen, 1.64; potash, 2.00; phosphoric acid from animal bone and phosphate rock; potash from kainit and muriat; nitrogen from tankage and animal bones. *Found*: Phosphoric acid, soluble, 2.87; reverted, 5.02; insoluble, 2.70; total, 10.59; available, 7.89; nitrogen, 1.64; potash, 2.59; availability of nitrogen, 86; chlorine, 3.6.

4895. *BAUGH'S WHEAT FERTILIZER*. R. T. Lowndes, Clarksburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.08; reverted, 3.60; insoluble, 2.67; total, 12.35; available, 9.68; nitrogen, 2.27; potash, 2.17; availability of nitrogen, 85; chlorine, 2.9.

4831. *BAUGH'S GENERAL CROP GROWER*. T. P. Licklider, Martinsburg. *Guarantee*: Phosphoric acid, insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 1.00; phosphoric acid from animal bone and phosphate rock; potash from kainit; nitrogen from tankage and animal bone. *Found*: Phosphoric acid, soluble, 1.62; reverted, 6.01; insoluble, 2.81; total, 10.44; available, 7.63; nitrogen, 0.87; potash, 1.48; availability of nitrogen, 77, chlorine, 6.8.

4897. *BAUGH'S GENERAL CROP GROWER*. R. T. Lowndes, Clarksburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 6.95; reverted, 2.88; insoluble, 3.03; total, 12.86; available, 9.83; nitrogen, 1.36; potash, 1.54; availability, 73; chlorine, 2.8.

4873. *BAUGH'S H. G. ACID PHOSPHATE, OR DISSOLVED S. C. ROCK*. J. H. Phillips & Sons, Berkeley Springs. *Guarantee*: Phosphoric acid, available, 14.00; phosphoric from phosphate rock. *Found*: Phosphoric acid, soluble, 9.86; reverted, 6.35; insoluble, 2.69; total, 18.90; available, 15.21.

4920. *BAUGH'S H. G. ACID PHOSPHATE OR DISSOLVED S. C. ROCK*. Harrisville Mill Co., Harrisville. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 15.48; reverted, 3.23; insoluble, 0.58; total, 19.28; available, 18.70.

4874. *BAUGH'S DISSOLVED ANIMAL BONE.*

J. H. Phillips & Son, Berkeley Springs. *Guarantee*: Phosphoric acid, insoluble, 3.00; total, 16.00; available, 13.00; nitrogen, 2.05; phosphoric acid from animal bone; nitrogen from animal bone. *Found*: Phosphoric acid, soluble, 3.57; reverted, 4.10; insoluble, 1.25; total, 18.92; available, 17.67; nitrogen, 2.54; availability of nitrogen, 91.

4894. *BAUGH'S ANIMAL BONE AND POTASH COMPOUND.*

R. T. Lowndes, Clarksburg. *Guarantee*: Phosphoric acid, insoluble, 3.00; total, 11.00; available, 8.00; potash, 2.00; nitrogen, 1.64; phosphoric acid from animal bone and phosphate rock; potash from kainit and muriate of potash; nitrogen from tankage and animal bone. *Found*: Phosphoric acid, soluble, 6.54; reverted, 3.22; insoluble, 3.16; total, 12.92; available, 9.76; nitrogen, 2.04; potash, 2.55; availability of nitrogen, 87; chlorine, 2.5.

4896. *BAUGH'S PURE RAW BONE MEAL.*

R. T. Lowndes, Clarksburg. *Guarantee*. Phosphoric acid, total, 21.00; nitrogen, 3.49; phosphoric acid from animal bone; nitrogen from animal bone. *Found*: Phosphoric acid, total, 22.82; nitrogen, 3.95; availability of nitrogen, 79.

4922. *BAUGH'S SOLUBLE ALKALINE SUPER-PHOSPHATE.*

Harrisville Mill Co., Harrisville. *Guarantee*: Phosphoric acid, available, 10.00; potash, 2.00; phosphoric acid from phosphate rock; potash from kainit and muriate of potash. *Found*: Phosphoric acid, soluble, 5.82; reverted, 5.12; insoluble, 1.80; total, 12.74; available, 10.94; potash, 2.38; chlorine, 5.2.

BOWKER FERTILIZER COMPANY,
BOSTON AND CINCINNATI.

4846. *BOWKER'S POTASH FERTILIZER*, T. B. Drummond & Co., Buckhannon. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 12.00; available, 10.00; potash, 2.00; phosphoric acid from dissolved mineral phosphate; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 3.90; reverted, 7.58; insoluble, 1.39; total, 12.87; available, 11.48; potash, 5.37; chlorine, 1.

4847. *BOWKER'S HARVEST BONE*. T. B. Drummond, & Co., Buckhannon. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 10.00; available, 8.00; nitrogen, 0.75; potash, 1.00; phosphoric acid from dissolved animal bone and mineral phosphate; potash from muriate of potash; nitrogen from dissolved bone and tankage. *Found*: Phosphoric acid, soluble, 4.62; reverted, 3.37; insoluble, 2.70; total, 10.69; available, 7.99; nitrogen, 1.19; potash, 1.33; availability of nitrogen, 75; chlorine, 0.8.

4848. *BOWKER'S DISSOLVED BONE WITH POTASH*. T. B. Drummond & Co., Buckhannon. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 12.00; available, 10.00; potash, 2.00; phosphoric acid from mineral phosphate; potash from muriate of potash. *Found*: Phosphoric acid, soluble, 1.69; reverted, 7.59; insoluble, 3.10; total, 12.38; available, 9.28; potash, 1.98; chlorine, 1.

S. M. HESS & BROS.,
PHILADELPHIA, PA.

4861. *SOLUBLE BONE*. Clovis Bros., Ellenboro. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; in-

soluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from acid phosphate. *Found*. Phosphoric acid, soluble, 7.68; reverted, 7.33; insoluble, 2.89; total, 17.80; available, 14.91.

4863. *EMPEROR PHOSPHATE*. Clovis Bros., Ellenboro. *Guarantee*: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 2.00; total, 12.00; available, 10.00; potash, 1.00; phosphoric acid from acid phosphate; potash from muriate. *Found*: Phosphoric acid, soluble, 1.80; reverted, 8.80; insoluble, 2.30; total, 12.90; available, 10.60; potash, 2.16; chlorine, 1.

4862. *WHEAT AND GRASS MANURE*. Clovis Bros., Ellenboro. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from acid phosphate; potash from muriate; nitrogen from tankage. *Found*: Phosphoric acid, soluble, 1.97; reverted, 6.16; insoluble, 2.38; total, 10.41; available, 8.03; nitrogen, 1.39; potash, 5.19; availability of nitrogen, 86; chlorine, 0.9.

JARECHI CHEMICAL COMPANY,

CINCINNATI, OHIO.

4928. *FISH AND POTASH POTATO AND TOBACCO FOOD*. W. S. Stout, Harrisville. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 0.82; potash, 4.00; phosphoric acid from bone black, phosphate and fish tankage; potash from muriate and carbonate; nitrogen from fish tankage and animal tankage. *Found*: Phosphoric acid, soluble, 6.90; reverted, 4.14; insoluble, 4.72; total, 16.76; available, 12.04; nitrogen, 0.96; potash, 3.70; availability of nitrogen, 88; chlorine, 0.5.

4929. *NO. 1 FISH GUANO.* W. F. Sill, Pennsboro.
Guarantee: Phosphoric acid, soluble, 8.00; reverted, 2.00; insoluble, 1.00; total, 11.00; available, 10.00; nitrogen, 0.82; potash; 1.00; phosphoric acid from bone black, phosphate and fish tankage; potash from muriate; nitrogen from fish tankage and animal tankage. *Found:* Phosphoric acid, soluble, 8.11; reverted, 4.41; insoluble, 2.24; total, 14.76; available, 12.52; nitrogen, 0.97; potash, 1.43; availability of nitrogen, 82; chlorine, 0.7.

G. OBER & SONS COMPANY,
BALTIMORE, MD.

4827. *OBER'S DISSOLVED BONE PHOSPHATE AND POTASH.* — Graham, Kingwood. *Guarantee:* Phosphoric acid, soluble, 9.00; reverted, 2.00; insoluble, 2.00; total, 13.00; available, 11.00; potash, 2.00; phosphoric acid from H. G. Florida phosphate; potash from sulphate and muriate of potash. *Found:* Phosphoric acid, soluble, 9.66; reverted, 1.78; insoluble, 0.69; total, 12.03; available, 11.34; potash, 2.16; chlorine, 4.03.

4828. *OBER'S DISSOLVED BONE PHOSPHATE.* — Graham, Kingwood. *Guarantee:* Phosphoric acid, soluble, 11.00; reverted, 3.00; insoluble, 2.00; total, 16.00; available, 14.00; phosphoric acid from H. G. Florida phosphate. *Found:* Phosphoric acid, soluble, 15.24; reverted, 2.21; insoluble, 0.49; total, 17.94; available, 17.45.

4833. *OBER'S DISSOLVED BONE PHOSPHATE.* R. N. Stewart & Son, Martinsburg. *Guarantee—*(As above.) *Found:* Phosphoric acid, soluble, 15.59; reverted, 1.81; insoluble, 0.73; total, 18.13; available, 17.40.

4866. *OBER'S DISSOLVED BONE PHOSPHATE*. Washington & Alexander, Charlestown. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 16.12; reverted, 2.63; insoluble, 0.58; total, 19.33; available, 18.75.

4892. *OBER'S DISSOLVED BONE PHOSPHATE*. A. G. Chrislipp, Philippi. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 15.71; reverted, 1.87; insoluble, 0.47; total, 18.05; available; 17.58.

4867. *OBER'S SPECIAL MIXTURE FOR WHEAT*. Washington & Alexander, Charlestown. *Guarantee*: Phosphoric acid, soluble, 7.50; reverted, 1.50; insoluble, 1.50; total, 10.50; available, 9.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from H. G. Florida phosphate, bone, tankage, fish; potash from Sulphate of potash; nitrogen from H. G. bone and blood tankage; fish and nitrate of soda. *Found*: Phosphoric acid, soluble, 9.35; reverted, 1.85; insoluble, 0.84; total, 12.04; available, 11.20; nitrogen, 0.91; potash, 2.30; availability of nitrogen, 87, chlorine, 3.9.

4888. *OBER'S FARMER'S MIXTURE*. A. E. Alexander, Old Moatsville. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 2.00; insoluble, 2.00; total, 11.00; available, 9.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from H. G. Florida phosphate, bone, tankage, fish; potash from sulphate of potash; nitrogen from H. G. Bone and blood tankage and fish. *Found*: Phosphoric acid, soluble, 8.51; reverted, 2.26; insoluble, 1.54; total, 12.31; available, 10.77; nitrogen, 0.82; potash, 2.20; availability of nitrogen, 85; chlorine, 4.5.

4864. *OBER'S LANGDON MIXTURE*. Washington & Alexander, Charlestown. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.00; total, 9.00; availa-

ble, 8.00; nitrogen, 1.03; potash, 1.25; phosphoric acid from H. G. Florida phosphate, dissolved and ground tankage; potash from sulphate of potash; nitrogen from nitrate of soda, dissolved and ground tankage. *Found*: Phosphoric acid, soluble, 4.85; reverted, 4.43; insoluble, 1.89; total, 11.17; available, 9.28; nitrogen, 0.98; potash, 1.86; availability of nitrogen, 90; chlorine, 3.8.

OHIO FARMER FERTILIZER CO.,

COLUMBUS, OHIO.

4837. *WHEAT MAKER AND SEEDING DOWN.*

C. H. Becker, Wheeling. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 3.00; total, 10.00; available, 8.00; nitrogen, 0.41; potash, 2.50; phosphoric acid from dissolved bone phosphate, potash from muriate of potash and tobacco stems; nitrogen from bone tankage, blood and tobacco stems. *Found*: Phosphoric acid, soluble, 2.70; reverted, 5.12; insoluble, 2.93; total, 10.75; available, 7.72; nitrogen, 0.61; potash, 2.64; availability of nitrogen, 90; chlorine, 2.

4916. *WHEAT MAKER AND SEEDING DOWN.*

The Racket Store, Lewisburg. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 1.75; reverted, 6.14; insoluble, 3.07; total, 11.96; available, 7.89; nitrogen, 0.61; potash, 3.05; availability of nitrogen, 80; chlorine, 2.

4915. *POTATO AND TOBACCO SPECIAL.* W.

P. Mason & Co., Mannington. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 3.00; total, 10.00; available, 8.00; nitrogen, 1.64; potash, 4.00; phosphoric acid from dissolved bone; potash from muriate of potash and tobacco stems; nitrogen from bone tankage, blood and tobacco stems. *Found*: Phosphoric acid, soluble, 3.48; reverted, 5.74; insoluble, 3.89; total, 13.01; available, 9.12; nitrogen, 1.78; potash, 5.58; availability of nitrogen, 82; chlorine, 0.8.

PIEDMONT MT. AIRY GUANO COMPANY,

BALTIMORE, MD.

4812. *PIEDMONT FARMER'S BONE AND POTASH*. C. W. Mayer & Son, Terra Alta. *Guarantee*: Phosphoric acid, insoluble, 2.00; total, 12.00; available, 10.00; potash, 2.00; phosphoric from S. C. rock, potash from kainit. *Found*: Phosphoric acid, soluble, 1.73; reverted, 7.44; insoluble, 1.32; total, 10.49; available, 9.17; potash, 2.45; chlorine, 2.

4813. *PIEDMONT H. G. S. C. BONE*. C. W. Mayer & Son, Terra Alta. *Guarantee*: Phosphoric acid, insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from S. C. Bone. *Found*: Phosphoric acid, soluble, 12.63; reverted, 2.76; insoluble, 0.38; total, 15.77; available, 15.39.

4816. *PIEDMONT DISSOLVED BONE PHOSPHATE POTASH GOODS*. C. W. Mayer & Son, Terra Alta. *Guarantee*: Phosphoric acid, insoluble, 1.00; total, 11.50; available, 10.50; potash, 1.00; phosphoric acid from dissolved bone black and dissolved phosphate rock; potash from muriate and kainit. *Found*: Phosphoric acid, soluble, 8.79; reverted, 1.13; insoluble, 2.37; total, 12.29; available, 9.92; potash, 1.19; chlorine, 3.6.

4927. *PIEDMONT DISSOLVED BONE PHOSPHATE POTASH GOODS*.—Kane & Keyser, West Union. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 7.69; reverted, 3.57; insoluble, 0.54; total, 11.80; available 11.26; potash, 1.39; chlorine, 3.3.

4924. *LEVERING'S EXCELSIOR*. Kane & Keyser. West Union. *Guarantee*: Phosphoric acid, insoluble, 1.00;

total 9.00; available, 8.00; potash, 1.00; nitrogen, 0.82; phosphoric acid from dissolved phosphate rock and dissolved bone tankage; potash, from muriate of potash and kainit; nitrogen from blood and bone tankage. *Found*: Phosphoric acid, soluble, 6.60; reverted, 3.37; insoluble, 0.77; total, 10.84; available, 10.07; nitrogen, 0.79; potash, 1.49; availability of nitrogen, 66; chlorine, 3.7.

RASIN-MONUMENTAL COMPANY,
BALTIMORE, MD.

4834. *S. & S. SPECIAL WHEAT COMPOUND*. R. N. Stewart, Martinsburg. *Guarantee*: Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 1.50; total, 9.50; available, 8.00; potash, 2.00; nitrogen, 1.03; phosphoric acid from tankage, fish and bone, Charleston, Florida and Tennessee rocks; potash from muriate and manure salts, nitrogen from bone, tankage and fish. *Found*: Phosphoric acid, soluble, 5.19; reverted, 3.49; insoluble, 2.55; total, 11.23; available, 8.68; nitrogen, 1.36; potash, 2.09; availability of nitrogen, 69; chlorine, 2.3.

4877. *RASIN'S BONE AND POTASH FERTILIZER*. A. G. Chrislip, Philippi. *Guarantee*: Phosphoric acid, soluble, 9.00; reverted, 1.00; insoluble, 1.50; total, 11.50; available, 10.00; potash, 2.00; phosphoric acid from S. C., Florida and Tennessee rock, bone and bone tankage; potash from muriate and manure salts. *Found*: Phosphoric acid, soluble, 3.42; reverted, 7.30; insoluble, 2.47; total, 13.19; available, 10.72; potash, 1.86; chlorine, 3.1.

4878. *RASIN'S DISSOLVED BONE*. A. G. Chrislip, Philippi. *Guarantee*: Phosphoric acid, soluble, 8.50; reverted, 1.50; insoluble, 1.50; total, 11.50; available, 10.00;

nitrogen, 1.64; phosphoric acid from bone and bone tankage; nitrogen from bone. *Found*: Phosphoric acid, soluble, 3.81; reverted, 6.51; insoluble, 5.59; total, 15.91; available, 9.32; nitrogen, 1.33; availability of nitrogen, 86.

4893. *RASIN'S ACID PHOSPHATE*. A. G. Chrislip, Philippi. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 1.00; total, 15.00; available, 14.00; phosphoric acid from S. C., Florida and Tennessee rocks, bone and bone tankage. *Found*: Phosphoric acid, soluble, 11.88; reverted, 4.24; insoluble, 1.51; total, 17.63; available, 16.12.

SCIENTILIC FERTILIZER COMPANY,

PITTSBURG, PA.

4844. *SCIENTIFIC CORN AND GRAIN*. Walter Marshall, Wheeling. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 4.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.50; potash, 2.00; phosphoric acid from one-third tankage; two-thirds mineral phosphate; potash from sulphate of potash; nitrogen from blood and tankage. *Found*: Phosphoric acid, soluble, 3.38; reverted, 4.56; insoluble, 1.59; total, 9.53; available, 7.94; nitrogen, 1.16; potash, 2.22; availability of nitrogen, 74; chlorine, 2.6.

4845. *PURE PAW BONE MEAL*. Walter Marshall, Wheeling. *Guarantee*: Phosphoric acid, total, 22.00; nitrogen, 3.25; phosphoric acid from bone; nitrogen from bone. *Found*: Phosphoric acid, total, 21.49; nitrogen, 3.96; availability of nitrogen, 81.

SWIFT & COMPANY,

CHICAGO, ILL.

4817. *SWIFT'S SPECIAL BONE MEAL*. George

Carskadon, Keyser. *Guarantee*: Phosphoric acid, total, 27.50; nitrogen, 0.82; phosphoric acid from animal bone; nitrogen from animal bone. *Found*: Phosphoric acid, total, 28.99; nitrogen, 1.02; availability of nitrogen, 87.

4818. *SWIFT'S BONE MEAL*. George Carskadon, Keyser. *Guarantee*: Phosphoric acid, total, 25.00; nitrogen, 2.50; phosphoric acid from animal bones, nitrogen from animal bones. *Found*: Phosphoric acid, total, 27.82; nitrogen, 2.23; availability of nitrogen, 91.

4822. *SWIFT'S PURE RAW BONE MEAL*. G. T. Hodges, Shepherdstown. *Guarantee*: Phosphoric acid, total, 23.00; nitrogen, 3.75; phosphoric acid from animal bone; nitrogen from animal bone. *Found*: Phosphoric acid, total, 23.39; nitrogen, 4.08; availability of nitrogen, 61.

4807. *SWIFT'S CHAMPION WHEAT AND CORN GROWER*. P. H. Wees, Elkins. *Guarantee*: Phosphoric acid, insoluble, 1.00; total, 13.00; available, 12.00; nitrogen, 1.64; potash, 2.00; phosphoric acid from pure animal bone acidulated; potash from muriate; nitrogen from animal bone. *Found*: Phosphoric acid, soluble, 2.03 reverted, 10.15; insoluble, 1.66; total, 13.84; available, 12.18; nitrogen, 1.73; potash, 2.09; availability of nitrogen, 88; chlorine, 1.1.

TUSCARORA FERTILIZER COMPANY,
BALTIMORE, MD.

4875. *ACID PHOSPHATE*. J. H. Miller & Son, Martinsburg. *Guarantee*: Phosphoric acid, soluble, 12.00; reverted, 2.00; insoluble, 2.00; total, 16.00; available, 14.00; phosphoric acid from super-phosphate. *Found*: Phosphoric acid, soluble, 13.01; reverted, 2.88; insoluble, 0.46; total, 16.35; available, 15.89.

4876. *SPECIAL CROP GROWER*. J. H. Miller & Son, Martinsburg. *Guarantee*, Phosphoric acid, soluble, 6.00; reverted, 2.00; insoluble, 2.00; total 10.00; available, 8.00; nitrogen, 0.82; potash, 2.00; phosphoric acid from animal bone and super-phosphate; potash from kainit, muriate and sulphate; nitrogen from bone, blood, tankage and nitrate. *Found*: Phosphoric acid, soluble, 3.15; reverted, 6.33; insoluble, 0.47; total, 9.95; available, 9.48; nitrogen, 0.98; potash, 2.28; availability of nitrogen, 86; chlorine, 4.1.

VIRGINIA-CAROLINA CHEMICAL COMPANY,

RICHMOND, VA.

4819. *FOURTEEN PER CENT ACID PHOSPHATE*. G. T. Hodges, Duffields. *Found*: Phosphoric acid, soluble, 11.31; reverted, 4.52; insoluble, 1.16; total, 16.99; available, 15.83.

WALKER STRATMAN & COMPANY,

PITTSBURG, PA.

4835. *GRAIN KING*. J. S. Leagitt, Wellsburg. *Guarantee*: Phosphoric acid, soluble, 5.00; reverted, 4.00; insoluble, 1.00; total, 10.00; available, 9.00; potash, 4.00; nitrogen, 0.82; phosphoric acid one-fifth tankage, four-fifths mineral phosphate; potash from muriate of potash; nitrogen from tankage and blood. *Found*: Phosphoric acid, soluble, 4.27; reverted, 2.39; insoluble, 1.89; total, 8.55; available, 6.66; nitrogen, 1.20; potash, 5.37; availability of nitrogen, 80; chlorine, 1.9.

4907. *GRAIN KING*. Moore & Hibbs, Mannington. *Guarantee*—(As above.) *Found*: Phosphoric acid, soluble, 4.55; reverted, 2.16; insoluble, 2.01; total, 9.72; available, 7.71;

nitrogen, 1.28; potash, 4.72; availability of nitrogen, 83; chlorine, 1.9.

4836. *PURE RAW BONE MEAL*. J. S. Leagitt, Wellsburg. *Guarantee*: Phosphoric acid, total, 22.00; nitrogen, 3.25; phosphoric acid from bone; nitrogen from bone. *Found*: Phosphoric acid, total, 22.07; nitrogen, 3.57; availability of nitrogen, 84.

4910. *PURE RAW BONE MEAL*. Thomas Nuzum, Grafton. *Guarantee*:—(As above.) *Found*: Phosphoric acid, total, 22.91; nitrogen, 3.81, availability of nitrogen, 79.

4912. *PURE RAW BONE MEAL*. Moore & Hibbs, Mannington. *Guarantee*:—(As above.) *Found*: Phosphoric acid, total, 22.68; nitrogen, 3.50; availability of nitrogen, 82.

4921. *PURE RAW BONE MEAL*. Cox Brothers, West Union. *Guarantee*:—(As above.) *Found*: Phosphoric acid, total, 22.89; nitrogen, 2.86; availability of nitrogen, 82.

4908. *FOUR FOLD*. Moore & Hibbs, Mannington. *Guarantee*: Phosphoric acid, soluble, 4.00; reverted, 4.00; insoluble, 1.00; total, 9.00; available, 8.00; nitrogen, 1.50; potash, 2.00; phosphoric acid from one-third tankage, two-thirds mineral phosphate; potash from sulphate of potash; nitrogen from blood and tankage. *Found*: Phosphoric acid, soluble, 3.88; reverted, 3.00; insoluble, 1.91; total, 8.89; available, 6.98; nitrogen, 1.25; potash, 2.52; availability of nitrogen, 82; chlorine, 2.7.

4913. *FOUR FOLD*. Thomas Nuzum, Grafton. *Guarantee*:—(As above.) *Found*: Phosphoric acid, soluble, 3.68; reverted, 3.52; insoluble, 2.39; total, 9.59; available, 7.20; nitrogen, 1.21; potash, 2.54; availability of nitrogen, 82; chlorine, 2.6.

4911. *HELP MATE*. Thomas Nuzum, Grafton. *Guarantee*: Phosphoric acid, soluble, 7.00; reverted, 5.00; insoluble, 1.00; total, 13.00; available, 12.00; phosphoric acid from mineral phosphate. *Found*: Phosphoric acid, soluble, 2.83; reverted, 8.23; insoluble, 2.46; total, 13.52; available, 11.06.

4925. *BONE AND MEAT*. Cox Brothers, West Union. *Guarantee*: Phosphoric acid, total, 16.00; nitrogen, 3.25; phosphoric acid from bone and tankage; nitrogen from bone and tankage. *Found*: Phosphoric acid, total, 16.39; nitrogen, 3.09; availability of nitrogen, 80.

4926. *BONE AND MEAT*. W. S. Stout, Harrisville. *Guarantee*—(As above.) *Found*: Phosphoric acid, total, 16.89; nitrogen, 3.14; availability of nitrogen, 80.

THE ROBERT A. WOOLRIDGE COMPANY,

BALTIMORE, MD.

4882. *PURE RAW BONE MEAL*. D. J. Howdershelt, Moatsville. *Guarantee*: Phosphoric acid, total, 22.00; nitrogen, 3.70; phosphoric acid from pure animal bones; nitrogen from pure animal bones. *Found*: Phosphoric acid, total, 21.66; nitrogen, 3.17; availability of nitrogen, 72.

4883. *FLORIDA ACID PHOSPHATE*. D. J. Howdershelt, Moatsville. *Guarantee*: Phosphoric acid, available, 14.00; phosphoric acid from dissolved phosphate rock. *Found*: Phosphoric acid, soluble, 8.85; reverted, 5.37; insoluble, 1.92; total, 16.14; available, 14.22.

4884. *GERMAN POTASH MIXTURE*. D. J. Howdershelt, Moatsville. *Guarantee*: Phosphoric acid, available, 10.00; potash, 2.00; phosphoric acid from dissolved phosphate

rock; potash from German kainit. *Found*: Phosphoric acid, soluble, 4.57; reverted, 6.29; insoluble, 1.32; total, 12.08; available, 10.86; potash, 1.85; chlorine, 5.4.

BRANDS FOUND DEFICIENT, OR CONTRARY TO GUARANTEE.

The results of the analysis of fertilizers found on sale in the State show the following brands to have fallen short, or to be contrary to guarantee, as stated below:

AMERICAN AGRICULTURAL CHEMICAL COMPANY.

4839. *WILLIAMS & CLARK'S DISSOLVED BONE AND POTASH*. *Guarantee*: Available, 10.00. *Found*: 9.55. *Guarantee*: Potash, 2.00. *Found*: 1.79.

BAUGH & SONS COMPANY.

4831. *BAUGH'S GENERAL CROP GROWER*. *Guarantee*: Available, 8.00. *Found*: 7.63.

BOWKER FERTILIZER COMPANY.

4849. *BOWKER'S DISSOLVED BONE WITH POTASH*. *Guarantee*: Available, 10.00. *Found*: 9.28.

PIEDMONT MT. AIRY GUANO COMPANY.

4816. *PIEDMONT'S DISSOLVED BONE PHOSPHATE POTASH GOODS*. *Guarantee*: Available, 10.50. *Found*: 9.92.

RASIN MONUMENTAL COMPANY.

4878. *RASIN'S DISSOLVED BONE*. *Guarantee*:

Available, 10.00. *Found:* 9.32. *Guarantee;* Nitrogen, 1.64.
Found: 1.33.

SCIENTIFIC FERTILIZER COMPANY.

4844. *SCIENTIFIC CORN AND GRAIN. Guarantee:* Nitrogen, 1.50. *Found:* 1.16.

VIRGINIA-CAROLINA CHEMICAL COMPANY.

4819. *FOURTEEN PER CENT. ACID PHOSPHATE.* Not registered.

WALKER, STRATMAN & COMPANY.

4835. *GRAIN KING. Guarantee:* Available, 9.00.
Found: 6.66.

4907. *GRAIN KING. Guarantee:* Available, 9.00.
Found: 7.71.

4921. *PURE RAW BONE MEAL. Guarantee:*
Nitrogen, 3.25. *Found:* 2.86.

4908. *FOUR FOLD. Guarantee:* Available, 8.00.
Found: 6.98. *Guarantee.* Nitrogen, 1.50. *Found:* 1.15.

4913. *FOUR FOLD. Guarantee:* Available, 8.00.
Found: 7.20. *Guarantee:* Nitrogen, 1.50, *Found:* 1.2.

4911. *HELP MATE. Guarantee:* Available, 12.00.
Found: 11.06.

4925. *BONE AND MEAT. Guarantee,* Nitrogen,
3.25. *Found:* 3.09.

4926. *BONE AND MEAT. Guarantee:* Nitrogen,
3.25. *Found:* 3.14.

THE ROBERT A. WOOLRIDGE COMPANY.

4882. *PURE RAW BONE MEAL.* *Guarantee:*
Total, 22 00. *Found.* 21.66. *Guarantee:* Nitrogen, 3.70.
Found: 3.17.

REGISTERED BRANDS.

FOR 1903.

The following is a list of the brands which were registered as required by law, during 1903:

AMERICAN AGRICULTURAL CHEMICAL COMPANY.

BALTIMORE SALES DEPARTMENT.

Super-phosphate.
Gem Alkaline Phosphate.
Regular Corn Fertilizer.
Dissolved Animal Bone.
Bone Meal.
Fine Ground Bone.
Pure Ground Bone.
W. & A. Special Fall Mixture.
Kainit.
Orchilla Guano.
Ruth's Dissolved Bone Phosphate.
Brodbeck's Alkaline Phosphate.
Reliable.
Bradley's Soluble Dissolved Bone.
Bradley's Dissolved Bone With Potash.
Bradley's Bean and Potato Potash.
Bradley's Niagara Phosphate.
Bradley's Alkaline Bone.

Canton Chemical Eagle Phosphate.
Canton Chemical Potato Manure.
Canton Chemical Resurgam Guano.
Canton Chemical Game Guano.
Canton Chemical C. C. C. Special Compound.
Canton Chemical Special Wheat, Corn and Grass Fertilizer.
Canton Chemical "Harrow" Brand Crop Grower.
Canton Chemical Soluble Bone and Potash.
Canton Chemical Dissolved S. C. Bone.
Canton Chemical Soluble Alkaline Bone.
Canton Chemical Patrons Bone Mixture.
Cleveland Dryer Forest City Buckeye.
Cleveland Dryer Phospho Bone.
Cleveland Dryer Horse Head Phosphate.
Cleveland Dryer Horse Head Phosphate with Potash.
Cleveland Dryer XXX Phosphate.

Detrick Quick Step Bone Phosphate for Potatoes and Tobacco.

Detrick Soluble Bone Phosphate and Potash.
Detrick Kangaroo Komplete Kompound.
Detrick Dissolved S. C. Bone.
Detrick Standard Potash Fertilizer.
Detrick Corn and Oats Fertilizer.
Detrick Imperial Compound.

Detrick Paragon Ammoniated Dissolved Bone Phosphate and Potash.

Lazaretto Crop Grower.
Lazaretto Bone Compound.
Lazaretto Special Potato Fertilizer.
Lazaretto Ammoniated Bone Phosphate.
Lazaretto Excelsior A. A. A.
Lazaretto Dissolved Bone Phosphate and Potash,

Lazaretto High Grade Dissolved Bone and Potash.
Lazaretto Dissolved Bone Phosphate.
Maryland Ammoniated Bone.
Maryland O. K. Ammoniated Fertilizer.
Maryland Tornado Fertilizer.
Maryland Bono Super-phosphate.
Maryland Dissolved S. C. Phosphate.
Pacific Nobsque Guano.
Pacific A No. 1 Phosphate.
Pacific Potato Phosphate.
Pacific Dissolved Bone and Potash.
Pacific Dissolved Bone Phosphate.
Reese's Half and Half.
Reese's Elm Phosphate.
Reese's High Grade Potash Mixture.
Susquehannah Alkaline Bone Phosphate.
Susquehannah Potato Phosphate.
Susquehannah XXV Phosphate.
Susquehannah Superior Rock Phosphate.
Williams & Clark's Royal Bone Phosphate.
Williams & Clark's Profolic Crop Producer.
Williams & Clark's Good Grower Potato Phosphate.
Williams & Clark's Dissolved Bone and Potash.
Williams & Clark's Acorn Acid Phosphate.
Zell's Special Compound for Potatoes and Vegetables.
Zell's Ammoniated Bone Super-phosphate.
Zell's Economizer Phosphate.
Zell's Little Giant.
Zell's Electric Phosphate.
Zell's Dissolved Bone Phosphate.
Zell's Dissolved S. C. Phosphate.
Great Eastern Unammoniated Wheat Special.

Great Eastern Corn Fertilizer.
Great Eastern Vegetable, Vine and Tobacco.
Great Eastern English Wheat Grower.
Great Eastern Soluble Bone and Potash.
Great Eastern Dissolved Bone.
Great Eastern Wheat Special.
M. E. Wheeler & Co.'s Corn Fertilizer.
M. E. Wheeler & Co.'s Potato Manure.
M. E. Wheeler & Co.'s Royal Wheat Grower.
M. E. Wheeler & Co.'s Wheat, and Clover Fertilizer.
M. E. Wheeler & Co.'s Electrical Dissolved Bone.
M. E. Wheeler & Co.'s Unammoniated Wheat Grower.

THE ABBOTT & MARTIN RENDERING COMPANY,
COLUMBUS, OHIO.

Ideal Grain Grower.
Tennessee Phosphate.
Herecules Phosphate.
Star Phosphate.
Peerless Bone and Potash.
Harvest King.
Abbotts Potash and Tobacco Special.
Fine Raw Bone Meal.

ARMOUR FERTILIZER WORKS,
BALTIMORE, MD.

Star Phosphate.
Phosphate and Potash No. 1.
Ammoniated Bone with Potash.
High Grade Potato.
Grain Grower.
Wheat, Corn and Oats Special.

Cereal Phosphate.

Bone Meal.

Wheat Special.

Acid Phosphate.

THE BALTIMORE PULVERIZING COMPANY,
BALTIMORE, MD.

Special Fall Mixture.

Farmer's Favorite Fertilizer.

S. C. Bone.

BAUGH & SONS COMPANY,
BALTIMORE, MD.

Baugh's Corn Fertilizer.

Baugh's Potato Fertilizer.

Baugh's Fish Mixture.

Baugh's Special Potato Manure.

Baugh's Raw Bone Super-phosphate.

Baugh's Peninsular Grain Producer.

Baugh's Export Bone with Potash.

Baugh's Warranted Pure Bone Meal.

Baugh's Dissolved Animal Bones.

Baugh's Double Eagle Phosphate.

Baugh's General Crop Grower.

Baugh's Animal Bone and Potash Compound.

Baugh's Wheat Fertilizer.

Baugh's Soluble Alkaline Super-phosphate.

Baugh's High Grade Acid Phosphate or Dissolved S. C.
Rock.

BOWKER FERTILIZER COMPANY,
BOSTON MASS.

Bowker's Harvest Bone.
Bowker's Dissolved Bone with Potash.
Bowker's Soluble Bone.
Bowker's Bone Meal.
Bowker's Potash Fertilizer.

CHICAGO FERTILIZER COMPANY,
CHICAGO, ILL.

Bone, Blood and Potash.
Wheat and Born Special.
No. 1 Acid Phosphate.
Diamond Phosphate.
Calumet Phosphate.
Western Bone Black and Potash.
Potato, Truck and Tobacco Fertilizer.
Chicago Raw Bone.

CINCINNATI PHOSPHATE COMPANY,
CINCINNATI, OHIO.

Capitol Wheat Grower.
Capitol Grain and Grass Grower.
Capitol Dissolved Bone and Potash.
Capitol Ground Bone.
Capitol Tobacco Food.

GRIFFITH & BOYD.
BALTIMORE, MD.

Griffiths & Boyd Original Super-phosphate.

Griffiths & Boyd Pure Fine Ground Bone Meal.
Fruit Tree Fertilizer.
Stable Manure Fertilizer.
Farmer's Potato Manure.
Spring Crop Grower.
Ammoniated Bone Phosphate.
Harvest Queen Phosphate.
Fish Bone and Potash.
Cereal Bone Plant Food.
Valley Fertilizer.
Soft Ground Bone Meal.
Griffith & Boyd's Grain and Grass Producer.
XX Potash Manure.
Special Grain Grower.
Peerless Fertilizer.
Double Strength Tobacco Grower.
High Grade Acid Phosphate.
Pure Dissolved Animal Bone.
Royal Potash Guano.
Farmer's Improved Phosphate.

JARECHI CHEMICAL COMPANY,

SANDUSKY, OHIO.

No. 1 Fish Guano.
C. O. D. Phosphate.
Ground Bone.
Dissolved Bone with Potash.
Fish and Potash, Potato and Tobacco Food.
Phosphate and Potash.

MARIETTA BONE AND PHOSPHATE COMPANY,

MARIETTA, OHIO.

"Horse" Brand Pure Raw Bone.

- “Horse” Brand Potato and Truck Special.
- “Horse” Brand Corn, Oats and Wheat Grower.
- “Horse” Brand Acid Phosphate.
- “Horse” Brand Pure Ground Bone.
- “Horse” Brand XX Special.

D. B. MARTIN COMPANY,
PHILADELPHIA, PA.

- Dissolved Organic Compound.
- Sure Grower.
- Crop Producer.
- Corn and Oats Special.
- Claremont Vegetable Grower.
- Steamed Bone.
- Acid Phosphate.
- Extra Bone and Potash.

MILLER FERTILIZER COMPANY,
BALTIMORE, MD.

- Wooldridge & Anderson's Old Hickory Phosphate.
- Wooldridge & Anderson's Faultless Ammoniated Bone Phosphate.
- Wooldridge & Anderson's Tiger Bone Stock Phosphate.
- Wooldridge & Anderson's Special Potato and Tomato Grower.
- Wooldridge & Anderson's "F. F. V." (Flesh and Fish Vegetator.)
- Wooldridge & Anderson's Battle Axe Potash Mixture.
- Wooldridge & Anderson's German Alkaline Mixture.
- Hustler Phosphate.
- S. C. Rock.
- W. G. Phosphate.

Special Tobacco Grower.
Standard Phosphate.
Ground Bone.

G. OBER & SONS COMPANY,
BALTIMORE, MD.

Ober's Dissolved Animal Bone.
Ober's Farmers Standard Ammoniated Phosphate.
Ober's Farmers Mixture.
Ober's Independent Ammoniated Super-phosphate.
Ober's Dissolved Bone Phosphate.
Ober's Dissolved Bone Phosphate and Potash.
Ober's High Grade Acid Phosphate.
Ober's Pure Raw Bone Meal.
Ober's Pure Bone Meal.
Ober's Special Mixture for Wheat.
Ober's S. & S. Special Wheat Compound.
Ober's Shenandoah Bone Phosphate.
Langdon's Mixture.

OHIO FARMER'S FERTILIZER CO.,
COLUMBUS, OHIO.

Raw Bone Meal.
Corn, Oats and Wheat Fish Guano.
General Crop Fish Guano.
Wheat Maker and Seeding Down.
Potato and Tobacco Special.
Superior Phosphate.
Soluble Bone and Potash.
Alkaline Bone.

PIEDMONT MT. AIRY GUANO COMPANY,

BALTIMORE, MD.

Piedmont Raw Bone Mixture.

Piedmont Royal Ammoniated Bone and Potash.

Piedmont Dissolved Bone Phosphate, Potash Goods.

Piedmont High Grade S. C. Bone.

Piedmont Potato Producer.

Piedmont "Plow" Brand.

Piedmont Special Potash Mixture.

Piedmont Soluble Bone and Potash.

Piedmont Harvest Queen.

Piedmont Farmers Favorite.

Levering's Excelsior.

POWHATAN CHEMICAL COMPANY,

RICHMOND, VA.

Magic Wheat Grower.

Magic Special Fertilizer.

Magic Ammoniated Phosphate.

Magic Bone and Potash Mixture.

Bone and Potash Mixture.

Virginia Dissolved Bone.

High Grade Acid Phosphate.

RASIN-MONUMENTAL COMPANY,

BALTIMORE MD.

Rasin's XXX Fertilizer.

Rasin's Empire Guano.

Rasin's Bone and Potash.

Rasin's Acid Phosphate.

Rasin's Dissolved Bone.

William Penn Crop Grower.

RICHMOND GUANO COMPANY,

RICHMOND, VA.

"Premium" Brand Fertilizer.

"Premium" Brand Wheat Grower.

Bone Mixture.

Bone and Potash Mixture.

High Grade Acid Phosphate.

Dissolved S. C. Phosphate.

SCIENTIFIC FERTILIZER COMPANY,

PITTSBURG, PA.

Scientific Phosphate and Potash.

Scientific Dissolved Bone.

Scientific Wheat and Clover.

Scientific Bone, Meat and Potash.

Scientific Bone and Potash.

Scientific Economy.

Scientific Potato.

Scientific Corn and Grain.

Scientific Grain Grower.

Bone and Meat.

Pure Raw Bone Meal.

High Grade Acid Phosphate.

SWIFT & COMPANY,

CHICAGO, ILL.

Swift's Super-phosphate.

Swift's Complete Fertilizer.
Swift's Special Bone Meal.
Swift's Pure Raw Bone Meal.
Swift's Champion Wheat Grower.
Swift's Potato and Tobacco Grower.
Swift's Dissolved Animal Bone.
Swift's Bone Meal and Blood.

I. P. THOMAS & COMPANY,
PHILADELPHIA, PA.

S. C. Phosphate.
Alkaline Bone.

TUSCARORA FERTILIZER COMPANY,
BALTIMORE, MD.

Acid Phosphate.
Bone and Potash.
Ammoniated Phosphate.
Special Crop Grower.
Tuscarora Standard.

VIRGINIA-CAROLINA CHEMICAL COMPANY.
RICHMOND, VA.

Allison & Addison Star Brand Guano.
Allison & Addison Little Giant Grain and Grass Grower.
Allison & Addison Standard Acid Phosphate.
Allison & Addison B. P. Potash Mixture.
J. C. Tinsley's Bone and Potash Mixtnre.
S. W. Travers' Wheat and Grass Fertilizer.
S. W. Travers' Beef, Blood and Bone Fertilizer.

S. W. Travers' Champion Corn Grower Fertilizer.
S. W. Travers' Capitol Bone-Potash Compound.
S. W. Travers' Capitol Dissolved S. C. Bone.
S. W. Travers' Dissolved Bone Phosphate.
Standard Bone and Potash.
Special Compound for Wheat.

WALKER, STRATMAN & COMPANY,
PITTSBURG, PA.

Phosphoric Acid and Potash.
Help Mate.
Pure Raw Bone Meal.
Bone and Meat.
Grain King.
Acid Phosphate.
Meat, Blood and Bone with Potash.
Potash and Bone Phosphate.
Big Bonanza.
Potato Special.
Four Fold.
Grain Manure.

ROBERT A. WOOLDRIDGE COMPANY,
BALTIMORE, MD.

Florida Acid Phosphate.
German Potash Mixture.
Liberty Bell Potash Mixture.
Champion Giant Phosphate.
Chieftain Bone Stock Phosphate.
Triumph Bone Stock Phosphate.
Special Potato Fertilizer.
Pure Raw Bone.

LIST OF AGENTS

WHOSE STOCK WAS SAMPLED DURING THE FALL OF 1903.

A. E. Alexander..	Old Moatsville
Armstrong, Chrislip, Day & Company.....	Buckhannon
T. B. Drummond.....	Buckhannon
C. H. Becker.....	Wheeling
Bishop & Barbe.....	Jane Lew
R. B. Bolyard.....	Fetterman
W. L. Cole.....	Clarksburg
George Carskadon.....	Keyser
O. R. Carmen.	Wellsburg
Clovis Brothers.....	Ellenboro
A. G. Chrislip.....	Philippi
Cox Brothers.....	West Union
W. R. Dudley.....	Wheeling
A. S. Dandridge... ..	Shepherdstown
M. S. Graham.....	Kingwood
R. M. Harper.....	Elkins
G. T. Hodges.....	Shepherdstown
J. A. Hall.....	Auburn
R. Hunter.....	Berkeley Springs
D. J. Howdershelt.....	Moatsville
Harrisville Mill Company.....	Harrisville
George Herring.....	Kingwood
Jackson Brothers.....	Buckhannon
Kain & Keyser.....	West Union
T. P. Licklider.....	Martinsburg
J. S. Leagitt.....	Wellsburg
R. T. Lowndes.....	Clarksburg
Lake & McCarty.....	Jane Lew
C. W. Mayer & Sons.....	Terra Alta
Walter Marshall.....	Wheeling

J. H. Miller & Sons.....	Martinsburg
Moore & Hibbs.....	Mannington
W. P. Mason.....	Mannington
Martin Nicola.....	Moatsville
Thomas Nuzum.....	Grafton
J. H. Phillips & Son.....	Berkeley Springs
L. G. Reppert.....	Easton
A. P. Russell & Company.....	Buckhannon
Henry Repenkall.....	Berkeley Springs
The Racket Store.....	Lewisburg
C. E. Siever.....	Keyser
The Schaffer & Brown Company.....	Kingwood
R. N. Stewart & Son.....	Martinsburg
J. N. Strickler & Son.....	Ellenboro
W. S. Stout.....	Harrisville
W. P. Wees.....	Elkins
Washington & Alexander.....	Charlestown
West Charleston Mill Company.....	Charleston

AN ACT

Concerning Commercial Fertilizers, State of West Virginia.

AN ACT concerning Commercial Fertilizers, and repealing chapter seventy-two of the Acts of the Legislature of West Virginia, of eighteen hundred and ninety-one.
(Passed February 2, 1901.)

Be it enacted by the Legislature of West Virginia:

1. Every person who shall sell, offer or expose for sale, or have in his possession with intent to sell in this State, any commercial fertilizer or manure, shall affix conspicuously to every package thereof a plainly printed statement, clearly and truly certifying the number of net pounds of fertilizer in a package, the name, brand or trade-mark under which the fertilizer is sold, the name and address of the manufacturer the place of manufacture, and stating the percentage of nitrogen or its equivalent in ammonia; of potash, soluble in distilled water; and of phosphoric acid in available form. soluble in distilled water, reverted, as well as the total phosphoric acid, and the materials from which said constituents are derived In the case of those fertilizers which consist of other cheaper materials, said labels shall give correct general statement of the composition and ingredients of the elements relied upon, contained in the fertilizer which it accompanies.

2. Before any commercial fertilizer is sold, offered or exposed

for sale in this State, the manufacturer, importer or party who causes it to be sold, exposed or offered for sale, shall file with the Director of the West Virginia Agricultural Experiment Station, under oath, the statement required to be affixed under section one of this act.

Provided, That when the manufacturer of any brand of fertilizer or manure shall file said sworn statement, no agent or dealer shall be required to file such statement. The making of an affidavit required by this chapter falsely shall be perjury.

3. The manufacturer, importer, agent or seller of any brand of commercial fertilizer or material used for manurial purposes, shall pay for each brand at the time he files a sworn statement required by section two of this act a registration fee of one dollar per annum.

4. The registration fee required to be paid by section three of this act, shall be paid to the treasurer of the West Virginia University for the use of the Agricultural Experiment Station, and the party making such payment shall take from the said treasurer triplicate receipts therefor, one of which he shall retain and the other shall be deposited, one with the Director of the Agricultural Experiment Station, and the other with the Secretary of the Board of Regents, and by them filed and preserved in their respective offices.

5. Immediately after the filing of the receipts aforesaid, with the Director of the Agricultural Experiment Station, said Director shall issue a certificate to the party making such payment, stating the amount of fees paid, and the name, brand or trade-mark under which the fertilizer is sold, the name and address of the manufacturer or importer, the place of manufacture, and that the applicant for said certificate is authorized to sell said fertilizer within the State of West Virginia for the period of one year from the first day of January to the thirty-first day of December, inclusive. Said certificates may be issued at any time for and during the current year, and may be issued during the month of December for the year commencing on the first day of January thereafter.

6. It shall be the duty of the Director of the West Virginia

Agricultural Experiment Station to print or cause to be printed a label or tag setting forth the sworn statement required in section two of this act. The Director shall furnish such labels or tags in quantities in one hundred or multiples thereof, to any person complying with the requirements of this act, and desiring to sell, offer or expose for sale any commercial fertilizer in this State, and shall receive pay therefor at the rate of forty cents for such number of labels or tags as may be required to be affixed to one ton of fertilizer, and shall, without delay, pay the same to the treasurer of the West Virginia University, for use of the Agricultural Experiment Station, and take duplicate receipts therefor, one of which he shall retain, and the other he shall deliver to the Secretary of the Board of Regents, who shall file and preserve the same in his office.

7. The Board of Regents of the West Virginia University shall expend the money received under the provision of this act in meeting the legitimate expenses of the Station in making analysis of fertilizers, in experimental tests of same, and in such other experimental work and purchases as shall inure to the benefit of the farmers of this State, and shall include in their annual report a statement of the receipts and disbursements thereof.

8. It shall be the duty of the Director of the said Experiment Station, in person or by deputy, to take samples for analysis from any lot or packages of any fertilizer or manure which may be in the possession of any dealer in the State, and he is hereby authorized to prescribe and enforce such rules and regulations as he may deem necessary to carry fully into effect the true intent and meaning of this act; and any agriculturist, purchaser of any fertilizer or manure in this State may take a sample of the same under the rules and regulations of the Director of the said Experiment Station and forward the same to him for analysis, and if the Director has reason to believe that the manufacturer of, or dealer in, such fertilizer or manure has made any false or fraudulent representations in regard to said fertilizer or manure, he shall cause the said sample to be analyzed free of charge, and certify the same to the person forwarding the sample. And it shall be the duty of every agent and dealer in fertilizers or manures, with-

in the meaning of this act, in this State, when ordering consignments thereof, to promptly notify the Director of the said Experiment Station of the amount ordered, and the place and approximate time of delivery of said fertilizers and manures.

9. Said Director shall also publish by bulletin, the brand, name and location of the manufacturer and chemical analysis of every fertilizer or manure analyzed or caused to be analyzed by him. Said last publication to be made, if practicable, before the time at which said fertilizer is to be applied to the soil.

10. Any manufacturer or vendor of any fertilizer or manure who shall sell or offer or expose for sale any fertilizer or manure without having previously complied with the provisions of this act as hereinbefore set forth, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than fifty nor more than five hundred dollars.

11. Any company, firm or corporation who shall wilfully remove from or deface or change any label, or tag, or brand affixed to any package of fertilizer under the provisions of this act before such fertilizer has been used for manurial purposes, or who shall sell such fertilizer without such label or tag being affixed thereto at the time of the sale, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than ten nor more than fifty dollars for each offense.

12. Any company, firm or person who shall remove from or cause to be removed from any package of commercial fertilizer or manure any statement, label or tag affixed thereto under the provisions of this act, and affix or cause the same to be affixed to any other package of commercial fertilizer or manure, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than ten nor more than fifty dollars for each offense.

13. Any company, firm or person violating any of the provisions of this act, or who fails to comply with any of the requirements of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall, when no other penalty is prescribed, be fined not less than ten nor more more than one hundred dollars for each offense. But this act shall not be construed

to apply to any one who manufactures fertilizers for his own use and not for sale.

14. The Director of said Experiment Station shall report to the prosecuting attorney of the county where the offense was committed all violations of the provisions of this act, and failure to comply therewith, and a copy of any label, statement or tag required to be filed with said Director or prepared by him, and any analysis made or caused to be made by him, when duly certified by said Director, shall be received in evidence in any prosecution or suit for any violation of the provisions of this act.

I, Harry Shaw, Clerk of the House of Delegates of West Virginia, hereby certify that the paper hereto annexed is a true copy of an Act of the Legislature of West Virginia passed on the second day of February, 1901, and approved by the Governor on the ninth day of February, 1901; and that the same takes effect ninety days from the date of its passage.

Given under my hand this March 20th, 1901.

HARRY SHAW,
Clerk of the House of Delegates.

